5. (Amended) The thermal transfer recording medium as claimed in claim 2, wherein said binder component (C) has a melt index of from 60 to 400.

6. (Amended) The thermal transfer recording medium as claimed in claim 3, wherein said binder component (C) has a melt index of from 60 to 400.

REMARKS

Claims 1-24 are pending. By this Office Action, claims 1-24 are rejected under §103. By this Amendment, claims 1 and 4-6 are amended. Support for the amendments can be found in the specification at least at page 7, lines 7-8. No new matter is added. In view of the foregoing amendments and the following remarks, reconsideration and allowance are respectfully requested.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

Entry of the amendments is proper under 37 C.F.R. §1.116 since the amendments: place the application in condition for allowance (for the reasons discussed herein); do not raise any new issue requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution); and place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

The Office Action rejects claims 1-24 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,210,794 B1 to Nakamura ("Nakamura") in view of U.S. Patent No. 5,741,387 to Coleman ("Coleman"). Applicant respectfully traverse the rejection.

Claim 1 is drawn to a thermal transfer recording medium that includes an ink layer including a binder component (C). More specifically, claim 1 recites that the binder

component (C) has a melt index of from 60 to 1,000. Nakamura and Coleman, alone or in combination, do not teach or suggest such a transfer medium.

As initially recognized in the December 17, 2001 Office Action, and again in the August 30, 2002 Office Action, Nakamura does not teach or suggest that the ethylene-vinyl acetate copolymer has a melt index within the instantly claimed range. To overcome the deficiencies of Nakamura, the Office Action cites Coleman for showing an image transfer sheet that includes a release layer including ethylene-vinyl acetate copolymers having a melt index of from 5 to 46.5. The Office Action further recognizes that one of ordinary skill in the art would have appreciated that the Coleman melt index would have been "optimal" for a thermal transfer medium's transferring property, wear resistance, and heat resistance. Applicants maintain that any transfer medium taught or suggested by the combination of Nakamura and Coleman would not include a binder component (C) having a melt index of from 60 to 1000, as now claimed.

The image transfer sheet described in Coleman differs in several key aspects from anything claimed by Applicants. Coleman describes an image transfer sheet containing a backing sheet, a "two layer structure" release layer on the backing sheet, and an ink layer on the release layer (Col. 2, lines 45-52, Col. 4, lines 42-46). In addition, the Coleman transfer sheet contains a "polymer layer" on the ink layer and a "mask layer" on the polymer layer (Col. 2, lines 53-59). The additional polymer layer serves as part of the two layer structure in the release layer (Col. 4, lines 42-46). The mask layer feature provides for transfer of only the heat release layer, the ink layer, and the polymer layer within the outlined ink design. During the heat transfer process, the polymer layer, the ink layer and the release layer within the outline formed by the mask layer are thermally transferred through the mask onto and/or into the substrate. During the transfer process, the mask becomes bonded to the polymer layer preventing transfer of polymer layer, ink layer and release layer underlying the mask (Col. 3, lines 15-24).

In contrast to Coleman, Applicants have designed a transfer medium that functions without a "mask layer." As a result, Applicants have produced the thermal transfer medium that includes the features as claimed, such as a peel layer laminated on the base material that includes a wax, an ink layer that includes a styrene resin, and a binder component that has a melt index of from 60 to 1,000, wherein the wax and styrene resin are compatible as defined in the specification.

Referring again to the release layer, not only does the Coleman release layer include a two layer structure, the first layer in contact with the backing sheet is described as a mixture of vinyl resin and polyethylene wax, and the second layer in contact with the first layer is an ionomer polymer (Col. 4, lines 42-46). The Coleman resin/wax combination layered with polymer produces a release layer that fundamentally differs from the claimed peel layer. As a result, Coleman provides no teaching, suggestion or motivation at all to alter the vinyl acetate and ethylene resin to a composition outside the disclosed "optimal" melt index of from 5 to 46.5.

One of ordinary skill in the art would not have found any suggestion or motivation in Coleman to alter the Nakamura thermal transfer sheet to include a resin binder composition outside the melt index recognized and taught as being optimal in Coleman itself. That is, neither reference provides any reason or motivation to select a melt index value that is over 29% higher than Coleman's highest optimal value, and then to use such non-optimal material in the transfer sheet of Nakamura. Any such combination is contrary to the teachings of the references themselves, and improper as a matter of law.

Applicants claim a thermal transfer recording medium that includes a release layer that includes a binder component having a melt index of from 60 to 1000. As shown in the specification at Table 1, and in the examples of Table 2, the thermal transfer recording medium within the scope of claim 1 produces excellent results in Applicability to non-coated paper, Sharpness, and Rub resistance at both 8 ips and 12 ips. As shown in Table 2, by

Examples 1, 2 and 3 (melt index of 60, 150 and 300, respectively) the claimed transfer medium displays particularly superior Sharpness compared to Example 6, the transfer medium apparently closest to anything that could be produced by the combination of Nakamura and Coleman (melt index of 3). These unexpected superior results are not taught or suggested anywhere in the cited references. As a result, the claimed thermal transfer recording medium would not have been obvious to one of ordinary skill in the art.

For at least these reasons, claims 1-24 would not have been obvious over the cited references. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact Applicants' representative at the telephone number listed below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

H. James Voeller
Registration No. 48,015

Attachment:
Appendix
Petition for Extension of Time

JAO:HJV/mmc

Date: January 15, 2003

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

APPENDIX

Changes to Claims:

The following is a marked-up version of the amended claim(s):

1. (Twice Amended) A thermal transfer recording medium, comprising:

a base material in the form of a thin film;

a peel layer laminated on said base material and including a wax (A); and,

an ink layer laminated on said peel layer and including a styrene resin (B), a binder component (C) and a coloring component (D), wherein said wax (A) is compatible with said styrene resin (B) and said binder component (C) has a melt index of from 60 to 1,000 ~~when within a weight ratio range of 10:90 to 90:10 of the wax and the styrene resin, respectively, and at a temperature at least 30°C more than the melting points of the wax (A) and the styrene resin(B)~~.

4. (Amended) The thermal transfer recording medium as claimed in claim 1, wherein said binder component (C) has a melt index of from ~~3~~ 60 to ~~1,000~~400.

5. (Amended) The thermal transfer recording medium as claimed in claim 2, wherein said binder component (C) has a melt index of from ~~3~~ 60 to ~~1,000~~400.

6. (Amended) The thermal transfer recording medium as claimed in claim 3, wherein said binder component (C) has a melt index of from ~~3~~ 60 to ~~1,000~~400.